> **Required Under House Bill 800 (2007)**
> **Maryland Health Care Commission – Program Evaluation**

Plans for Collecting Enrollment, Benefit, and Institutional Claims Data

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Executive Summary

The General Assembly passed House Bill 800 (HB 800), Maryland Health Care Commission – Program Evaluation, (2007 Laws of Maryland, Chapter 627), which reauthorized the MHCC and its programs. Among the several changes, the law expanded the types of information that may be collected as part of the Medical Care Data Base (MCDB) to include data on eligibility (plan participation), institutional services (primarily hospital inpatient and outpatient information) and insurance product design. This report addresses the HB 800 requirement that the Commission report to the Legislature on its plans to collect data in these new areas and how the new data would be used to promote quality and affordable health care.

Although the MHCC currently collects information about claims for professional services, and HSCRC collects hospital discharge information, there is no practical way to link these records in order to study the treatment of particular episodes of illness across inpatient and outpatient settings. This information is vital to developing effective and cost-effective health systems.

Private payers can provide information on the plan participation for 3.0 million individuals, data on utilization for the 300,000 inpatient hospitalizations and 1.4 million outpatient services, and information on the benefits levels for insurance contracts written in Maryland. When combined with data on professional services and drugs, the expanded data system will be better-suited to address policymakers' and consumers' questions on the costs of health care, the efficiency of different treatments of the same condition, and variations in the use of health care services by regions of the state and subpopulations.

Several states, including Maine, Massachusetts, and New Hampshire, collect, or are planning to collect, data on all health care services provided by insurers in their states. These states have moved beyond what is currently collected from payers by MHCC. The federal HIPAA privacy rule strictly limits use of protected health care information for non-health care purposes. If MHCC goes forward with the collection, no directly identifiable patient information such as names, addresses, or social security numbers will be collected.

The costs for adding plan participation data, claims, and benefit information are manageable for payers and MHCC. Based on estimates provided by payers, costs for the expansion will total approximately $700,000 for initial development and $250,000 for annual submissions. MHCC's one-time development expenses could total $150,000, evenly divided between data processing contractor costs and staff technical support. The Commission will work closely with state policymakers and stakeholders to set priorities for studies and information services that would use the additional data.

MHCC staff recommends moving to the full data collection permitted under HB 800 through a three year transition process starting with the collection of information about plan participants in year one, adding institutional claims in year two, and incorporating information about benefit design in year three. Submission of information would begin in 2009. Major details of the data submissions will be defined in consultation with payers and other stakeholders.

Background on the Medical Care Data Base

In 1993, the Maryland General Assembly enacted health care reform legislation that included the creation of the Maryland Medical Care Data Base (MCDB), a data base of health care practitioner services obtained from health care insurance carriers and HMOs (payers) doing business in Maryland and who collect more than $1 million in health insurance premiums. It was intended that information on payments and services derived from the MCDB could be used to support the development of cost containment strategies and assist payers, policymakers, practitioners, and the public in health care decision-making. Details regarding the data elements to be submitted (and the submission formats) were defined by the Maryland Health Care Commission (MHCC, Commission) in data regulations. The MHCC convened a data base workgroup comprised of members representing the various stakeholders (payers, practitioners, policymakers, consumers, and health care researchers) to determine both the format and types of information that would be submitted to the MCDB based on the availability and value of the information balanced by cost considerations and privacy concerns. In response to the dramatic increase in prescription drug spending in the 1990s, these regulations were revised in October 1999 to include information on privately insured prescription drug spending and utilization, as permitted under the original legislation. The 2006 MCDB contains data on 87.3 million services totaling approximately $5.7 billion in professional payments. The 2006 prescription drug component of the MCDB contains data on 23 million prescriptions totaling $1.9 billion in drug spending.

In 2007, the General Assembly passed House Bill 800 (HB 800), Maryland Health Care Commission – Program Evaluation, (2007 Laws of Maryland, Chapter 627), which reauthorized the Commission and its programs. The law expanded the types of information that may be collected as part of the Medical Care Data Base, so that the MHCC can provide a more complete picture of health care spending by private insurers. The expansion permits the inclusion of data on insurance eligibility, facility services (primarily hospital inpatient and outpatient information) and insurance product design. This report addresses the HB 800 requirement that the Commission report to the Legislature on its plans to collect data in these new areas and how the new data would be used to promote quality and affordable health care. These new requirements, if adopted, will apply to insurance carriers and HMOs already submitting the data under COMAR 10.25.06.

The additional data will add plan participation and benefit information on about 3.0 million individuals and utilization and service information on 350,000 inpatient hospitalizations and 4.0 million outpatient, emergency department, and clinic visits.

MCDB Data Expansion Description and Rationale

The MHCC is currently considering an expansion of the current data collection to include:

- Information on the **characteristics of the participants** in medical and drug plans. The information would include both demographic characteristics (age, sex, geographic location) of the enrollee and the relationship of the enrollee to the subscriber.

- Insurance claims for **institutional services**, including hospital inpatient, outpatient, and emergency department services.

- Information on **health insurance plan design characteristics**, including service benefits, required deductibles, and copayment or coinsurance requirements by service (or drug) type.

Information on Characteristics of Enrolled Individuals

Each of these data expansions could result in important new information for payers, policymakers, health care providers, researchers and the public. Currently the MCDB contains information on users of services. In any year a percentage of enrollees do not obtain services (non-users). The Medical Expenditure Panel Survey, a survey conducted by the federal government of approximately 50,000 households, shows that nationally approximately 11 percent of the privately insured population obtain no health care in a year.[1] If utilization patterns in Maryland are similar to the U.S., approximately 300,000 privately insured non-users are not represented in the MCDB. Information on the characteristics of all enrolled individuals, including non-users, is vital for information such as the following:

- Developing estimates of per capita service use and spending across all enrollees, or enrollees in particular demographic groups or geographic regions;

- Determining the extent to which growth in services is a result of a higher percentage of enrollees requiring the service versus increased use among traditional users of the service;

- Measuring enrollment by type of insurance product or type of insurer; and

- Determining if the health status of enrolled populations differs by type of product or insurer.

The consequences of not including privately insured non-users is easy to predict for some studies, but more difficult for others. For example, per capita spending and user rates for the total privately insured population are overstated because individuals with no spending are not represented. The impact is more difficult to predict when spending or service use is reported by patient or insurance product characteristics because the use of services and spending is linked to

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[1] MHCC internal analysis of the 2004 Medical Expenditure Survey, 2007

such factors as age, county of residence, and whether the insurance product is purchased in the individual or group market.

Insurance Claims for Institutional Services

Services obtained at institutional facilities (hospital inpatient, outpatient, and emergency departments) are significantly more expensive on a per claim basis than the typical practitioner services now included in the MCDB.   Spending on institutional services accounted for 35 percent of spending by insurance carriers and HMOs for privately insured individuals in 2005.[2] For treatment that involves hospitalization, professional services constitute a small portion of most of the total cost for an inpatient hospitalization.[3] The addition of institutional services to the MCDB would permit MHCC to provide a more complete picture of health care utilization and expenditures among the privately insured. The inclusion of institutional service use is especially critical for accurate estimates of per capita spending and service use among individuals with serious acute or chronic illnesses, who are much more likely to use institutional services than other enrollees. Additionally, it would enable MHCC to assess spending and service use for illnesses across time, by type of product or insurer, or by geographical region, and to determine the contribution of such illnesses to per capita spending across all enrollees or within particular demographic groups.

Information on Insurance Product Design

Patient liability and scope of coverage affect the use of services under the insurance contract. The most comprehensive study on the relationship of more medical care was carried out more than 25 years ago in a randomized trial of the influence of co-payments on utilization and outcomes, which found that those provided free care, received about 40percent more care than those with co-payments.[4] Recently, employers and insurers have sought to increase incentives to encourage the efficient use of services. High-deductible products that include a tax benefit have also entered the Maryland market in the last several years. MHCC staff believes that information on benefit design would be useful for understanding if patients respond to the new incentives, particularly in addressing the question of whether these products are attractive only to the healthy among the insured population. These data will be equally important in analyzing the effectiveness of consumer-directed plans compared to low deductible plans in reducing the rate of growth of total expenditures for individuals.

Information on plan participation will enable MHCC to determine the benefit and cost-sharing arrangements that are predominant among employers and individual purchasers in any particular year. It will also allow the Commission to track how employers and insurers alter their plans over time in response to rising health care costs and changes in insurance mandates.

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[2] MHCC, *Experience from 2005: State Health Expenditure Analysis*. Baltimore, MD, February 2007.
[3] For services such as child birth, professional services account for about 30 percent of total payments. That percentage falls near 15 percent for conditions such as heart failure or pneumonia.
[4] Newhouse J. *Free for All*. Cambridge, Mass: Harvard University Press; 1993.

Activities in Other States

Over 40 states have developed hospital inpatient data sets, similar to the hospital discharge data set collected by the Health Services Cost Review Commission. More than 20 states, including Maryland, also collect data on emergency room and outpatient care from hospitals. A limited number of states collect information beyond data on hospital services. Many of these states limit collection to a defined set of services such as ambulatory surgery or radiology. A few states collect data directly from large multi-specialty groups, but waive small practices from the data collection requirement. MHCC identified five states that collect claim and eligibility data from insurance companies and HMOs. In the mid-1990's, when Maryland began development of the MCDB, it was a leader in the collection of this type of data. As shown in Table 1, four of the other five states have more extensive data collection initiatives underway.

The data collection initiatives underway in the five other states reflect the slow progress at the federal level on development of a common patient identifier. When the MCDB was authorized under HB 1359 in 1993, the Legislature believed that the establishment of a common patient identifier was almost certain. In the past 15 years, the federal government has made little progress in developing the identifier due to privacy concerns. Despite renewed interest in an identifier to support electronic medical record exchange, prospects for a common patient identifier are dim.

State data organizations, including MHCC, have examined the feasibility of using probabilistic matching to combine hospital, physician, and prescription drug data assuming the absence of a common identifier. [5] These techniques offer some benefit, but they are time-consuming and require acquisition of expensive software. The matching programs require a significant number of demographic variables such as street address of residence, gender, and date of birth or detailed diagnosis information, to generate high match rates. Neither street address nor the full date of birth is currently collected on the MCDB. Such data elements are flagged as directly identifiable health information under the federal government's privacy regulations. MHCC staff does not intend to add these data elements. Given the absence of recommended linkage variables, MHCC has concluded that the probabilistic matching approach does not offer much promise.

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[5] Probabilistic matching is a technique for linking data in which common characteristics from the source files are compared (scored). If the scores meet a confidence threshold, the records are assumed to be for the same individual.

Table 1: Scope of the Data Collection for Maryland and other States that Require Data Submission from Insurance Companies and HMOs

	Maryland	Kansas	Maine	Mass.	New Hampshire	Utah
Medical Services						
Plan Participation	Users of Professional Services	√	√	√	√	Medicaid, S-CHIP, PCN*
Prof. Services	√	√	√	√	√	Medicaid, S-CHIP. PCN
Institutional Services		√	√	√	√	√
Start Date	1997	1998	2003	2008	2005	1992
Prescription Drugs						
Plan Participation		√	√	√	√	Medicaid, S-CHIP, Select Private
Rx Claims	√	√	√	√	√	Medicaid, S-CHIP, Select Private
Start Date	1999	1998	2003	2008	2005	2003

* PCN (Primary Care Network) is a new 1115 waiver program that provides primary care services to adults with children under age 18.
Note: Several other states, including Vermont, have initiatives under way, but limited information is available regarding the status.

Feasibility and Costs of Payer Submissions

In August 2007, MHCC held a meeting to obtain feedback from insurers on their ability to provide the desired information in each of the potential data expansion categories. To facilitate the discussions, MHCC staff provided material on the expanded data collection requirements and outlined several collection scenarios. After the meeting, payers were surveyed regarding the costs associated with their most current MCDB data submission and their projected costs for complying with the possible data expansions. All insurers who currently submit information to the MCDB participated in the meeting, either in person or via conference call, and the majority of insurers responded to the cost survey. Commission staff also held separate conferences with several payers to make sure that they understood the proposed data collection requirements.

The survey of insurance carriers and HMOs yielded helpful information on the total costs for the current MCDB data collection (encounter and pharmacy claims) and the costs for expanded collection of eligibility, benefits, and institutional claims. The Commission received responses from 15 of 24 payers in the market, including payers with large market share such as the United Healthcare and CareFirst, and medium-sized HMOs such as CIGNA Healthcare Mid-Atlantic, Inc. and Kaiser Permanente Mid-Atlantic States, Inc. Table 2 presents the current costs of collection and the development costs associated with expanding the collection to include facility and eligibility information.

Table 2: Costs of Current Data Collection and Expanded Collection Startup Costs

	Total	Average per Submitter[6]
Current Collection		
Yearly Extract Cost	$315,000	$13,125
Expanded Collection		
Initial Development	660,000	27,500
Yearly Extract Costs	240,000	10,000
Yearly Processing Costs	$555,000	$23,125

The total costs of submitting the current data is about $315,000, or an average of about $13,000 per insurance carrier or HMO. [6] Expanding the data collection would cost the industry $660,000 in one-time development costs, along with approximately $240,000 in annual costs associated with the yearly extract. The average cost per submitter, as defined in the data regulations, would increase by $10,000.

Costs to MHCC

MHCC will incur additional contractor costs associated with developing and processing the new information. Table 3 presents actual and estimated costs for processing the MCDB. The MHCC currently reimburses a contractor $313,000 annually for editing the claims and organizing these data into the MCDB. One MHCC staff person is dedicated 50 percent of time to MCDB payer support. The total cost to MHCC for current activities is $350,000.

The one-time cost to modify the MCDB to accommodate the additional data is $150,000. The contractor will incur $75,000 in additional costs for developing editing procedures and designing data tables to store the eligibility, benefits, and institutional claim data. MHCC's labor costs will increase initially for creating the regulations, extending outreach to the payers, and working with the contractor in designing the eligibility and institutional claim data bases.

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[6] Per submitter costs are defined as the costs for each entity that has a certificate of authority with the MIA. Many large payers have several certificates of authority. For example, CareFirst has two certificates and submits separately for CareFirst of Maryland and CareFirst BlueChoice. A payer with two submissions would incur $26,250 in costs (2 * $13,125).

Table 3: Costs to MHCC of Increased Data Collection and Expanded Collection Startup Costs

	Contractor	MHCC Fully Loaded Labor Costs
Current On-going Processing Costs	$313,000	$50,000
Expanded Collection		
One-time development and education costs	75,000	75,000
Yearly On-going Processing costs	50,000	25,000
Total On-going Costs	$363,000	$75,000

Note: Fully-loaded labor costs include salary, fringe benefits, and overhead associated with the labor.

The MHCC will incur $75,000 in on-going contractor and labor costs for the data collection after development. These costs appear manageable within current budget caps. These estimates do not include costs of constructing new analyses and assisting stakeholders that will use the eligibility and institutional data. These activities could significantly increase analysis demands. Given current resources, MHCC will need to work with policymakers and stakeholders to prioritize studies conducted using the expanded data base. This more informative database opens up opportunities to expand partnerships with academic institutions in the state.

Expanding the Data Collections to Meet the Requirements of HB 800

Changing the data requirements for data submissions to the MCDB necessitates a change in MHCC regulations (COMAR 10.25.06, Maryland Medical Care Data Base and Data Collection), which takes about six months to complete. Additionally, insurers must be notified of any changes in the data requirements for a particular year of services and enrollment at least one year in advance. Given these requirements, the earliest possible implementation of any component of the possible data expansions is for services and enrollment during 2009, which would be submitted in and processed during 2010. When previous changes in MCDB data collection have been made, data expansion have been "phased-in" over several years. The phase-in period gave insurers an opportunity to transition their data systems and staff to comply with the new regulations. It also gave MHCC and its data processing vendor time to assist the insurers in their efforts to comply with the new regulations and also to determine whether the submission requirements resulted in the anticipated information or if the requirements should be modified

Options for MCDB data expansion discussed in this section include:

- Transition to full data submission over 3 years,

- Implement all components of the data expansion simultaneously.

The advantages and disadvantages for each option are discussed below. Although a recommendation is provided, MHCC will convene a workgroup of insurers, policymakers, and researchers to assist in the development of the new data collection before proceeding with major aspects of the expansion.   The dialogue will be developed with all stakeholders so that this and other opportunities can be explored. These discussions are likely to be more productive if they start from shared values regarding increasing the transparency of the health care system and promoting increased efficiency and quality in the delivery of care, rather than addressing potentially polarizing issues such as uniquely identifying providers or payers, or attempting to develop a unique patient identifier. Efforts will be made to give stakeholders an opportunity to give input into the design from both conceptual and technical perspectives.

Implement the Data Expansion in Phases
This option would implement the new data requirements in three phases. The order of implementation would be to first collect the eligibility information. Once the phase-in of eligibility information has been complete, the second phase, submission of the facility information, could begin. Once these data are organized, the third and final phase, collection of the health plan benefit design characteristics, would be initiated.   The phase-in could occur in as short a time as a three-year transition, but could extend beyond three years if unexpected problems arose.

The phased approach is likely to result in the new data being translated into useful information as quickly as possible. Incremental changes will ensure that MHCC can most efficiently manage the new collection. Using this approach, MHCC would direct insurers and HMOs' staff to create a new data expansion only after the programs and processes for the previous one have been tested and finalized. Starting the transition with the plan participation information will allow the MHCC to improve estimates of per capita use of services and different types of specialists. Access to plan participation data will allow MHCC to develop more precise comparisons of utilization by plan and delivery system. The plan participation data is essential to combining professional and institutional claims data that MHCC intends to use for developing estimates on the cost of treating common conditions. Information on total condition-specific health spending (including both practitioner and institutional expenditures) is considered by some to be the most important information that can be generated from the data expansions.

A disadvantage with this approach is that it will delay full implementation of data collection as permitted under HB 800. Some payers object to a long transition period as it requires information technology staff to be dedicated to the project for an extended period of time.

Implement Data Expansion Simultaneously
Proceeding with all data expansions simultaneously might be preferred by some insurers, since they would have the opportunity to make one change to their data submission programs and processes. These payers contend that on-going, incremental changes could unnecessarily extend the effort. The cost estimates supplied by the payers indicate that the overall challenge, although significant, is not unmanageable.

As noted earlier, simultaneously incorporating eligibility, institutional, and benefit information could present a bigger challenge for payers and MHCC.   A simultaneous expansion will require additional resources to manage the new data inputs. The new data requirements will increase data quality problems, necessitating some payers to resubmit data and extending the processing

time. Re-submission and associated delays could affect the various analyses using the MCDB and the reports that are based on those analyses.

There was no consensus among the payers on which expansion could be completed most easily. About half the payers preferred reporting the eligibility data first, while the remainder favored starting with institutional claims.

Recommendations for Expanding Collection

MHCC staff recommends implementing the data collection expansion on an incremental basis. Staggering the data expansion would enable MHCC to meet the new collection requirements and new reporting needs with a minimal resource expansion. Final decisions on sequencing require additional input from stakeholders. A conceivable implementation time line is shown in Table 4.

Table 4: Transition to Data Collection as Defined in HB 800	
November 2007	Convening of Data Base Work Group
March 2008	Draft MCDB Submission Specifications Released
May 2008	Promulgation of Proposed Regulations COMAR 10.25.06
June 2008	Start of Comment Period
September 2008	Final Adoption of COMAR 10.25.06
December 2008	Notification of Payers of Requirements for 2009 adding Plan Participation
December 2009	Notification of Payers of Requirements for 2010 adding Institutional Claims
June 2010	Submission of MCDB with Plan Participation Data
December 2010	Notification of Payers of Requirements for 2011 adding Benefit Information
June 2011	Submission of MCDB with Institutional Claims
June 2012	Submission of MCDB with Benefit Information

The MHCC sees value in allowing payers flexibility in adopting new specifications that will be necessary. Some payers will prefer to implement the new requirements simultaneously. These payers may contend that their information technology staff could most efficiently extract data from internal systems if all specifications were provided at the same time. That approach would eliminate the need for staff to return to the same application the following year. Other payers may find the staggered approach more efficient. To accommodate both groups of payers, MHCC believes that it should release all submission requirements at the same time, but allow a two-year delay for institutional claims. Payers that wish to complete the process in a single year could do so and organizations that needed two years would still comply with the regulatory requirements.

Completing all specifications prior to the start of any new data submission will benefit a contractor in two ways. First, a contractor could complete all requirements, if all specifications are released at the same time. Second, the transition period for institutional claims gives the contractor an opportunity to work with early adopters to eliminate potential problems that could result in significant bottlenecks the following year. MHCC will accept a limited number of institutional claim submissions on a test basis prior to the 2010 start date.

Appendix A

Health Insurers and HMOs – Required to Provide Information For 2006
Data due June 30, 2007

ORGANIZATION	Payer ID #	ORGANIZATION	Payer ID #
Aetna U.S. Healthcare	P030	Guardian Life Insurance Company of America	P350
Aetna Life & Health Insurance Co.	P020	Kaiser Foundation Health Plan of the Mid-Atlantic States, Inc.	P480
American Republic Insurance Co.	P070	MAMSI Life and Health Ins. Co.	P500
CareFirst BlueChoice, Inc.	P130	Fidelity Insurance Co.	P510
CareFirst of Maryland, Inc.	P131	MD-Individual Practice Association, Inc.	P520
CIGNA Healthcare Mid-Atlantic, Inc.	P160	MEGA Life & Health Insurance Co.	P530
Connecticut General Life Ins. Co.	P180	Optimum Choice, Inc.	P620
Corporate Health Insurance Co.	P220	State Farm Mutual Automobile Ins. Co.	P760
Coventry Healthcare of Delaware, Inc.	P680	Trustmark Insurance Co.	P830
Time Insurance Co. (Assurant Health)	P280	UniCare Life & Health Insurance Co.	P471
Golden Rule Insurance Co.	P320	Union Labor Life Insurance Co.	P850
Graphic Arts Benefit Corporation	P325	United Healthcare Insurance Co.	P820
Great-West Life & Annuity Ins. Co.	P330	United Healthcare of the Mid-Atlantic, Inc.	P870

Appendix B

Eligibility (Plan Participation) Data Elements

1. Patient Encrypted ID – The unique ID for each person on this file would correspond to the same unique ID used for the Encounter & Pharmacy files.
2. Birth Month
3. Birth Year
4. Sex
5. Zip code of residence – prefer each individual's ZIP
CHARACTERISTICS OF THE ENROLLEE'S BENEFITS
6. Type of Plan (HMO, PPO, EPO, etc.)
7. Coverage Type (Small group, Large group, Public, etc.)
8. Policy Type (individual/family)
9. HIPAA Employer Number (encrypted) or Plan Group Number
10. Consumer Directed Health Plan (CDHP) flag (HSA and HRA)
11. Beginning Date of Enrollment
12. End Date of Enrollment
13. Relationship to Policy-holder (self, spouse, child)

Appendix C

Institutional Claim Data Elements

Claim Summary Record -- Based on an Aggregation from the Bill
1. Patient Encrypted ID – The unique ID for each person on this file corresponding to the same ID assignment for Encounter & Pharmacy Files
2. Hospital Tax ID
3. Hospital NPI
4. Internal Payer claim number
5. Record Type (hospital inpatient, hospital outpatient-ER, hospital outpatient-clinic, hospital outpatient-ambulatory surgery, non-hospital facility)
6. Source of Admission (ER, Home, Transfer)
7. Destination after Discharge (Home, SNF, Nursing Home, etc.)
8. Date of Admission or Start of Service
9. Date of Discharge or End of Service
10. ICD-9 or CPT-4 Procedure Code (depending on type of record)
11. Primary Diagnosis
12. ICD-9 Secondary Diagnosis Codes (up to 5)
13. Total Amount Billed on the Claim
14. Total Amount Allowed on the Claim
15. Total Amount Reimbursed by payer
16. Total Patient Deductible for the Claim
17. Total Patient Coinsurance
18. Total Patient Co-payment
19. Total Other Patient Obligations such as services over the cap
20. Total Coordination of Benefit Savings or Other Payer Payments
21. Bill Type (Interim, Final, Summarized Stay) if available
22. Source of start and end of service information (service line item, claim, summarized stay)
Note: Interim and Final Summary record should not include services summarized in other claim records. Summarized stay records are constructed records by payers and include aggregations across claims.